

**IN THE CLAIMS**

Please substitute claims 1-18 with the following:

1. (Currently Amended) A fractal structure comprising a plurality of ~~regions~~  
~~different in fractal dimension characterizing the self-similarity~~ regions, wherein a first of said  
plurality of regions has a first fractal structure grown from a start point of time of growth to a  
first point of time, the first fractal structure grown by:

identifying the lattice sites adjacent to one of the plurality of lattice sites;

for each lattice site adjacent to the one lattice site;

determining the probability that the lattice site is selected as part of the first fractal  
structure;

selecting another lattice site based on the probability that the lattice site is selected  
as part of the first fractal structure; and

adding the other lattice site to the first fractal structure; and

until the first point of time;

identifying the lattice sites adjacent to the other lattice site; and

for each lattice site adjacent to the other lattice site;

determining the probability that the lattice site is selected as part of  
the first fractal structure;

selecting the other lattice site based on the probability that the  
lattice site is selected as part of the first fractal structure; and

adding the other lattice site to the first fractal structure.

2. (Original) The fractal structure according to claim 1 wherein the nature of phase transition occurring in the fractal structure is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

3. (Original) The fractal structure according to claim 1 wherein electron-to-electron correlation of an interactive electron system is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

4. (Original) The fractal structure according to claim 1 wherein the magnetization curve of ferromagnetic phase transition is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

5. (Original) The fractal structure according to claim 1 wherein the nature of chaos appearing in the fractal structure is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

6. (Original) The fractal structure according to claim 1 wherein quantum chaos in the electron state is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

7. (Original) The fractal structure according to claim 1 wherein quantum chaos in the electron state is controlled by addition of a magnetic impurity.

8. (Original) The fractal structure according to claim 6 wherein quantum chaos in the electron state is controlled by addition of a magnetic impurity.

9. (Currently Amended) The fractal structure according to claim 1 ~~wherein said fractal structure includes:~~ wherein a first the first region having a first fractal dimension and forming forms a core; and ~~wherein a one or more second~~ of the plurality of regions surrounding

surrounds said first region and having a second fractal dimension lower than said first fractal dimension.

10. (Currently Amended) The fractal structure according to ~~claim 4~~ claim 9 wherein said first region and said second region exhibit a stellar shape as a whole.

11. (Original) The fractal structure according to claim 9 satisfying  $D_{f1} > 2.7$  and  $D_{f2} < 2.3$  where  $D_{f1}$  is said fractal dimension and  $D_{f2}$  is said second fractal dimension.

12. (Original) The fractal structure according to claim 9 satisfying  $2.7 < D_{f1} \leq 3$  and  $1 \leq D_{f2} < 2.3$  where  $D_{f1}$  is said fractal dimension and  $D_{f2}$  is said second fractal dimension.

13. (Original) The fractal structure according to claim 9 satisfying  $2.9 \leq D_{f1} \leq 3$  and  $1 \leq D_{f2} < 2.3$  where  $D_{f1}$  is said fractal dimension and  $D_{f2}$  is said second fractal dimension.

14. (Currently Amended) A method of forming a fractal structure having a plurality of ~~regions different in fractal dimension characterizing the self-similarity regions, wherein a first of the plurality of regions comprises a plurality of lattice sites in a fractal dimension, the method comprising the steps of:~~

~~growing a fractal structure from one or more origins, and changing growth conditions with time in the growth process thereof such that different fractal dimensions are obtained~~

identifying the lattice sites adjacent to one of the plurality of lattice sites;

for each lattice site adjacent to the one lattice site;

determining the probability that the lattice site is selected as part of the first fractal structure;

selecting another lattice site based on the probability that the lattice site is selected as part of the first fractal structure; and  
adding the other lattice site to the first fractal structure; and  
until the first point of time;  
identifying the lattice sites adjacent to the other lattice site; and  
for each lattice site adjacent to the other lattice site;  
determining the probability that the lattice site is selected as part of  
the first fractal structure;  
selecting the other lattice site based on the probability that the  
lattice site is selected as part of the first fractal structure; and  
adding the other lattice site to the first fractal structure.

15. (Original) The method of forming a fractal structure according to claim 14 wherein there are used growth conditions ensuring the first fractal dimension to be made from the growth start point of time until a first point of time, and growth conditions ensuring a second fractal dimension lower than the first fractal dimension to be made from the first point of time to a second point of time.

16. (Original) The method of forming a fractal structure according to claim 15 satisfying  $D_{f1} > 2.7$  and  $D_{f2} < 2.3$  where  $D_{f1}$  is said fractal dimension and  $D_{f2}$  is said second fractal dimension.

17. (Original) The method of forming a fractal structure according to claim 15 satisfying  $2.7 < D_{f1} \leq 3$  and  $1 \leq D_{f2} < 2.3$  where  $D_{f1}$  is said fractal dimension and  $D_{f2}$  is said second fractal dimension.

18. (Original) The method of forming a fractal structure according to claim 15 satisfying  $2.9 \leq D_{f1} \leq 3$  and  $1 \leq D_{f2} \leq 2.3$  where  $D_{f1}$  is said fractal dimension and  $D_{f2}$  is said second fractal dimension.